

Notes on the genera *Thoressa* and *Pedesta*, with description of a new species from South China

(Lepidoptera, HesperIIDae)

by

HAO HUANG & CHENG-HUI ZHAN

Abstract: The genus *Pedesta* is merged into the genus *Thoressa* as a synonym. Some recently described species of the genera *Thoressa* and *Pedesta* are reviewed and the following new combination and new synonyms are given: *Thoressa dianchiana* (syn. nov. = *Thoressa baileyi*), *Pedesta baileyi nanka* (syn. nov. = *Thoressa baileyi*), *Thoressa luanchuanensis* (comb. nov. = *Ampittia luanchuanensis*), *Thoressa nakai* (syn. nov. = *Thoressa luanchuanensis*), *Thoressa abprojecta* (syn. nov. = *Thoressa blanchardii shensia*), *Thoressa breviprojecta* (syn. nov. = *Thoressa fusca caenis*). The unique holotype of *Thoressa nanshaona* is redescribed and discussed. Two interesting species of the genus *Thoressa* are reported from Guangdong province, S. China. One is described as new, namely *Thoressa xiaqingae* spec. nov. The other one is *Thoressa gupta leechii* EVANS, 1932, new to the butterfly fauna of Guangdong.

Introduction

The junior author made several collecting trips to Nanling Nature Reserve, Guangdong province, S. China during the last years. His collection of the genus *Thoressa* including two species was presented to the senior author who has been preparing a review of the genera *Thoressa* and *Pedesta* in the Chinese area. Then a cooperation was made on this material from Guangdong and one species was found as a new record for the butterfly fauna of Guangdong whilst another species proved to be a species new to science.

Generic classification

Thoressa SWINHOE, [1913] genotype *Pamphila masoni* MOORE, 1878

= *Pedestes* WATSON, 1893 genotype *Isoteinon masuriensis* MOORE, 1878 (preoccupied homonym)

= *Pedesta* HEMMING, 1934 genotype *Isoteinon masuriensis* MOORE, 1878 (replacement name for *Pedestes*) syn. nov.

According to EVANS (1949), *Pedesta* differs from *Thoressa* only in the more obtuse, blunter and thicker apiculus of antennae with less nudum segments, and in the absence of lateral processes on the tegumen of the male genitalia. However such delimitation is unclear among some species and they change gradually in these diagnostic characters. For instance, *Pedesta baileyi* has the lateral processes of the tegumen visible and as long as in some individuals of *Thoressa bivitta* (3 ♂ from Sichuan, Yunnan and Tibet examined), but has nudum number less than 10 and apiculus rather thick and blunt; *Pedesta viridis* has the lateral processes of tegumen absent but has a nudum number up to 12 as in some individuals of *Thoressa gupta* and apiculus rather slender and pointed. At my hand is an unidentified specimen of *Thoressa* from NE. Yunnan (under study at present) which has the lateral process of tegumen as long as in *Pedesta baileyi* but has a nudum number up to 12 as *viridis* and apiculus as slender as in most *Thoressa* species. Therefore it is reasonable to merge the genus *Pedesta* into the genus *Thoressa*.

The following new combinations are given for the previous *Pedesta* species: *Thoressa masuriensis* (MOORE, 1878) comb. nov., *T. panda* (EVANS, 1937) comb. nov., *T. pandita* (DE NICEVILLE, 1885) comb. nov., *T. blanchardii* (MABILLE, 1876) comb. nov., *T. baileyi* (SOUTH, 1914) comb. nov., *T. serena* (EVANS, 1937) comb. nov., *T. cuneomaculata* (MURAYAMA, 1995) comb. nov., *T. hishikawai* (YOSHINO, 2003) comb. nov., *T. viridis* (HUANG, 2003) comb. nov.

Revisional notes on recently described species

Thoressa baileyi (SOUTH, 1914)

= *Halpe baileyi* SOUTH, 1914: 614. Holotype ♂ Menkong.

= *Pedesta baileyi nanka* EVANS, 1949. Holotype ♂ Wushi, Szechwan. **syn. nov.**

= *Thoressa dianchiana* MURAYAMA, 1995: 33. Holotype ♂ Tu-guan-cun, Yunnan (preserved in the Lake Biwa Museum, Japan) [examined] **syn. nov.**

There are two distinct forms of this species distributed and intercrossed irregularly in NW. Yunnan and W. Sichuan, and there is no geographical line to divide these two forms. The form, *baileyi*, with ochreous brown ground colour on the underside of the hindwing, has been known from the Lancang valley (NW. Yunnan), Tali (N. Yunnan), and Ta Tsien Lou (W. Sichuan), whilst the form, *nanka*, with yellow ground colour on the underside of the hindwing, has been known from Wushi (Sichuan), Lijiang (NW. Yunnan), Tu-guan-cun (NW. Yunnan) and Nujiang valley (NW. Yunnan). There is no difference in male genitalia between these two forms. The size that was used by EVANS as one of the diagnostic characters for *nanka* is variable even in examples from the same locality. These two forms were considered as distinct subspecies by EVANS, due to his poor knowledge of Chinese geography.

After an examination of the holotype, the recently described *T. dianchiana* proved to be a synonym of *T. baileyi*. The holotype of *dianchiana* belongs to the form *nanka* with its male genitalia (fig. 1) showing no difference from *baileyi*.

Thoressa serena (EVANS, 1937)

= *Pedesta serena* EVANS, 1937: 16. Holotype ♂ Ta Tsien Lou, Sichuan.

The previous record of this species from Yao-jia-ping, Gao-li-gong-shan Mts., NW. Yunnan in the senior author's paper (HUANG, 2003: 24–27, 25, fig. 31, 71, 163, fig. 18) was probably the misidentification of an undescribed species. The true *T. serena* has gnathos shorter and conspicuously divided into two parts and the dorsal branch of left cuiller obsolete. Up to now, besides the type locality in Sichuan, *serena* has been recorded also from NW. Yunnan (Tsekou), NE. Burma (Kambaiti) and N. Vietnam (Tonkin). However all these records need to be confirmed by the examination of male genitalia of the specimens, and there is the possibility to find different species among these records.

The senior author has not examined any specimen from the type locality.

Thoressa hishikawai (YOSHINO, 2003)

= *Pedesta hishikawai* YOSHINO, 2003: 9, figs. 25, 27, 37. Holotype ♂ Zhong-dian, NW. Yunnan.

This species shows close resemblance to *T. baileyi* f. *nanka* in external features but differs remarkably in having whitish coloring in cell and anal area on the underside of the hindwing. Another recently described *T. viridis* from Nujiang, NW. Yunnan shows a single minute forewing cell spot and uniform greenish ground colour on the underside of the hindwing, thus cannot be confused with any other species.

The genitalia figured and described by YOSHINO show remarkable difference from either *T. baileyi* or *T. viridis*, with uncus processes narrower and cuiller rounded and evenly serrate, without a dorsal branch.

Thoressa nanshaona MARUYAMA, 1995: 33 (col. pl. XIIb, figs. 1, 2)

Holotype ♂ Teng-chong, Yunnan (preserved in the Lake Biwa Museum, Japan) [examined].

In the original description, the data of the holotype were stated as "24. May. 1995, Tu-guan-cun, Yunnan". The examination of the unique holotype preserved in the Lake Biwa Museum, Japan however shows that the holotype is labeled from Tengchong, Yunnan, 24th April 1995.

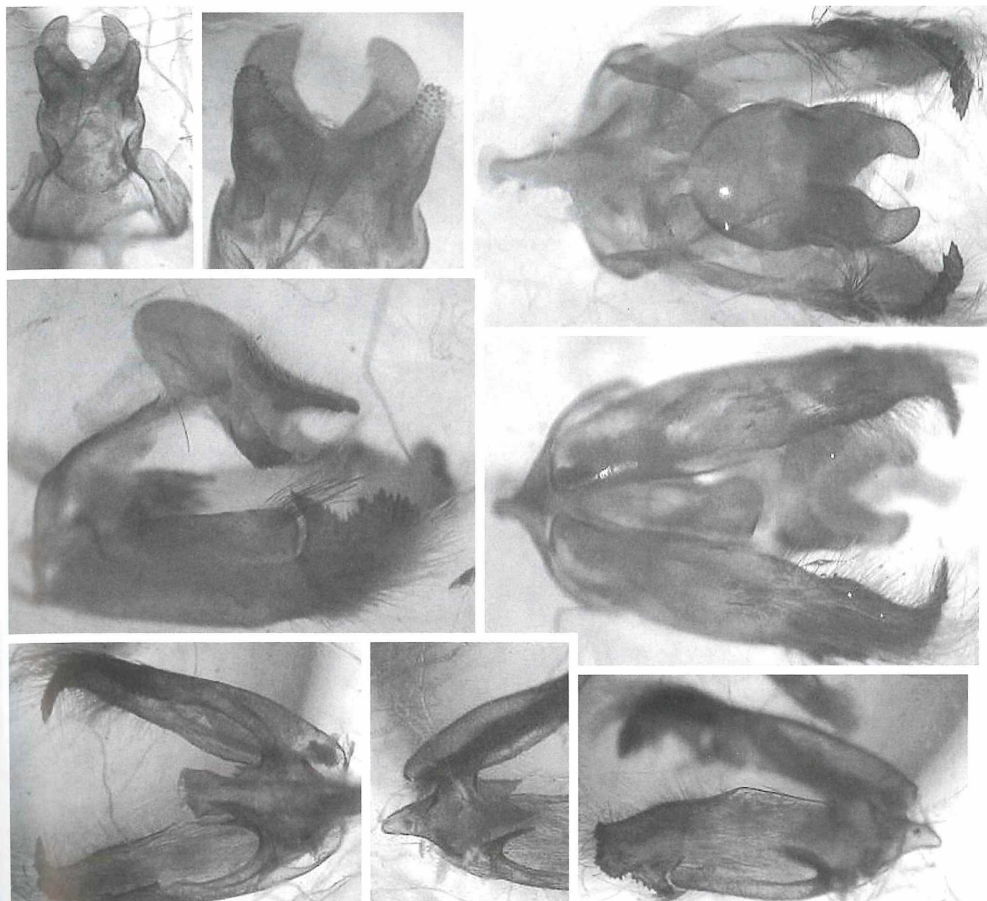


Fig. 1: Male genitalia taken from the holotype of *Thoresa dianchiana* (syn. = *T. baileyi*) consisting of ventral view of uncus and gnathos (left top), of ventral view of enlarged uncus and gnathos (central top), of dorsal view of complete genitalia (right top), of lateral view of complete genitalia (central left), of ventral view of complete genitalia (central right), of ventral view of both clasps (left bottom), of dorsal view of clasps to show the right footstalk (central bottom), and of inner lateral view of right clasp (right bottom).

This species is very close to *T. pandita* and shows no conspicuous difference in male genitalia from the latter. It differs from *pandita* only in wing pattern having double cell spots more oblique, directed to the inner margin of discal spot in space 2 and several obscure pale spots present on the underside of the hindwing.

A redescription of the unique holotype is as follows.

Length of forewing 13 mm. Upperside. Forewing. Ground colour blackish brown. Ciliae grayish. No male brand. No spot in space 1b. Whitish spots in spaces 2 and 3 overlapping for half of their length, three subapical whitish spots, double cell spots widely separated from discal spots in spaces 2 and 3 and erected to the forewing costa. Hindwing. Ground colour blackish brown. Ciliae yellowish. No spot present. Underside. Forewing. Ground colour mostly blackish except costal and subapical areas yellowish. All spots on upperside repeated. Hindwing. Ground colour yellowish except basal and anal area dusted with black. Submarginal pale spots present but very faint and ill-defined.

Male genitalia (fig. 2). Uncus and gnathos similar to those of *T. pandita* and *T. blanchardii*. Tegumen without apparent lateral process. Both left and right footstalks simple and single pointed as in *T. pandita*, not bifurcate. Both left and right cuillers similar in shape, with dorsal branch folded with harpe (usage of EVANS, 1949), distal branch rounded in lateral view with outer margin incurved, very similar to that of *T. pandita*.

The true status of *nanshaona* needs examination of more specimens in the future.

***Thoressa luanchuanensis* (WANG & NIU, 2002) comb. nov.**

= *Ampittia luanchuanensis* WANG & NIU, 2002: 278, figs. 13, 14, 34–38. Holotype ♂ Luan-chuan, Henan, C. China.

= *Thoressa nakai* YOSHINO, 2003: 9, figs. 29, 30, 39. Holotype ♂ Shen-nong-jia, Hubei, C. China, **syn. nov.**

There is no difference between *luanchuanensis* and *nakai* in both wing pattern and male genitalia figures according to their original descriptions.

This species is characterized in male genitalia by the uncal processes incurved at the tip in dorsal view and cuiller simple in structure.

***Thoressa blanchardii shensia* (EVANS, 1949)**

= *Pedesta blanchardii shensia* EVANS, 1949: 249. Holotype ♂ Tapai Shan, S. Shensi (now Tai-bai-shan, Shaanxi).

= *Thoressa abprojecta* WANG & YUAN, 2003: 63–64. Holotype ♂ Qin-ling, Shaanxi. **syn. nov.**

The authors of *abprojecta* overlooked all the taxa of the genus *Pedesta* for comparison when describing their new species. According to the illustration of specimen and genitalia, there is no doubt to regard *abprojecta* as a synonym of *shensia*.

***Thoressa fusca caenis* (LEECH, 1894)**

= *Halpe caenis* LEECH, 1894: 625. Holotype ♂ Chia-kou-ho, W. China.

= *Thoressa breviprojecta* YUAN & WANG, 2003: 64–65. Holotype ♂ Lu-shan, Sichuan. **syn. nov.**

According to the illustration of specimen and male genitalia, *breviprojecta* does not run out of the individual variation of *T. fusca* and should be conspecific with the latter. The authors of *breviprojecta* only examined one male specimen from Sichuan identified as *T. fusca* for comparison. It should be noted that *fusca* is very variable even in a single population from the same locality. The ground colour of the underside varies from very dark brown to pale yellowish brown or to greenish brown. The tip of gnathos can be pointed or blunt. The dorsal branch of the left clasp can be as tall as the tip of the harpe or much lower than the tip of the harpe. The left footstalk can be single pointed or with a shorter lower branch. The right footstalk varies in width, with lower branch shapely pointed or obsolete.

New distributional data

***Thoressa gupta leechii* EVANS, 1932 (col. pl. XIIb, figs. 3, 4)**

1 ♂, length of forewing: 17 mm. Nanling Nature Reserve, Ru-yang, Guangdong province, China. May 1st 2002, leg. C.-H. ZHAN. In coll. C.-H. ZHAN.

The unique specimen and its male genitalia (fig. 3) are illustrated. We identified this population as ssp. *leechii* because of the absence of forewing cell spot and discal spots on the underside of the hindwing. The typical *leechii* was described from Sichuan province, W. China and we have examined only one male for comparison. The previous records for this species are restricted to Sichuan and Yunnan.

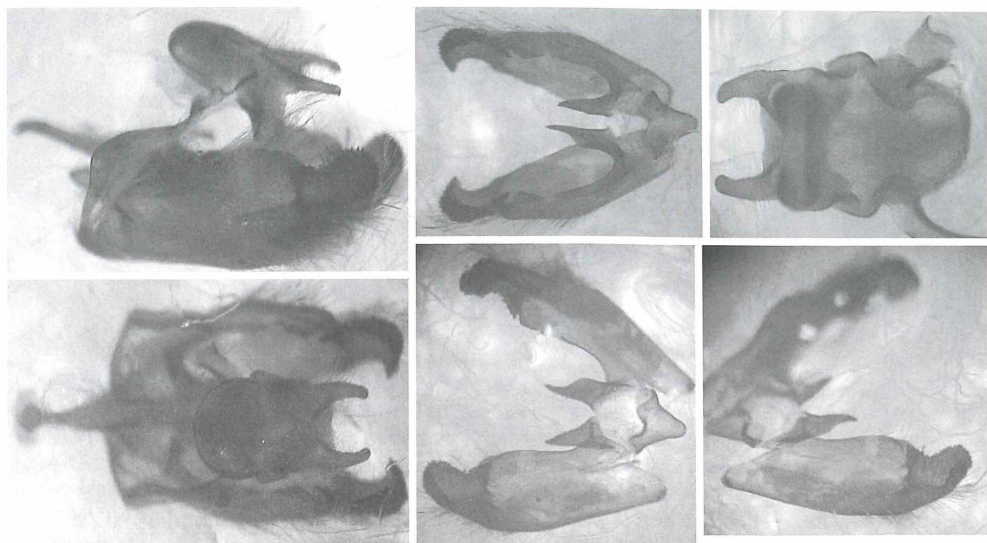
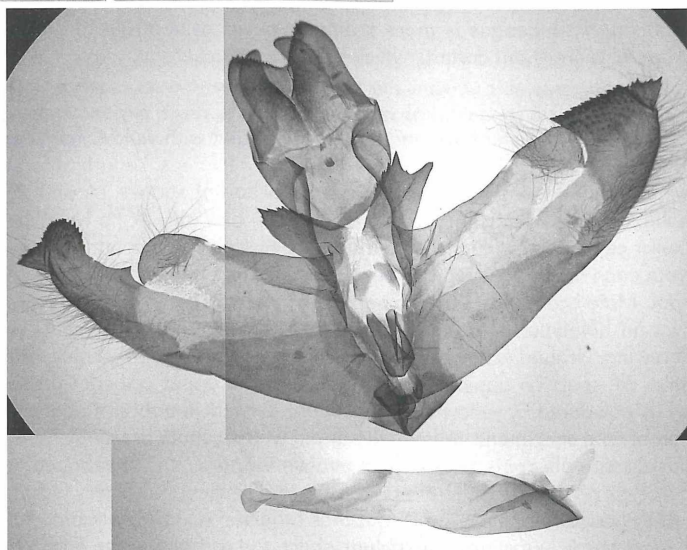


Fig. 2 (above): Male genitalia of *Thoressa nanshaona* (holotype) consisting of lateral view of complete genitalia (left top), of dorsal view of complete genitalia (left bottom), of dorsal view of both clasps (central top), of ventral view of uncus, gnathos and tegumen (right top), of inner lateral view of left valva (central bottom), and of inner lateral view of right valva (right bottom).

Fig. 3 (right): Male genitalia of *Thoressa gupta leechii* (Guangdong) consisting of spread genital capsule with dorsum in ventral view and both clasps in inner lateral view (top) and of aedeagus (bottom).



New description

Thoressa xiaoqingae spec. nov. (col. pl. XIIb, figs. 5, 6)

Diagnosis

In external features this new species is somewhat close to *T. latris* (LEECH, 1894) from W. Sichuan (Ta-tien-lu area), but can be distinguished at once from the latter by the following combination of characters.

- 1) On both sides of the forewing, the upper cell spot is absent or if present much smaller than the lower cell spot, whereas in *latris* both upper and lower cell spots are subequal in size.
- 2) On the underside of the hindwing all pale spots are ill-defined, not clearly marked as in *latris*.

3) Male genitalia are very much different: uncal branches much closer to each other than in *latris*, gnathos paired in ventral view, not protruded in central portion as in *latris*, clasps much broader at basal half than in *latris*, with footstalks well developed, not obsolete as in *latris*.

In male genitalia (figs. 4, 5) this new species is allied to *T. serena* and *T. blanchardii*, but can be easily distinguished from both of them by the following combination of characters.

1) Forewing is more produced than in *blanchardii*, with apex more pointed and termen straighter than in *blanchardii*.

2) Forewing discal spots in spaces 2 and 3 are more widely separated from each other than in both *serena* and *blanchardii*.

3) Forewing upper cell spot is obsolete, not well developed as in *serena*.

4) On the underside of the hindwing, the discal spots are usually present, not absent as in *serena* and *blanchardii*.

5) Male genitalia are constantly different: clasp is apparently broader at the base than at middle portion, whereas in *serena* and *blanchardii* it is even in width throughout; both left and right cuillers have inner face between the two processes strongly serrate, whereas in *serena* and *blanchardii* the left cuiller has outer edge of dorsal process smooth or slightly serrate; the dorsal process of cuiller is well developed as in *blanchardii*, conspicuously stronger than in *serena*; the distal process of cuiller is less developed than in *serena* and *blanchardii*; right footstalk is bifurcate as usual, but has the two branches subequal in length as in *serena*, not with upper branch much longer than lower branch as in *blanchardii*; aedeagus is more strongly convex at ventral margin near the tip than in *serena* and *blanchardii*, without cornuti, which are present in *serena*.

Description

Male. Club blackish above and below, not ringed with yellow. Apiculus reddish but tipped with black. Nudum number 11. Ciliae destroyed in type specimens. Length of forewing 15.5 mm. Upperside. Forewing. Ground colour dark brown, basal portion of spaces 1A and 1B and costa clad with ochreous hairs, all spots whitish in colour. Upper cell spot absent (in holotype) or very minute (in paratype). Lower cell spot prominent. Discal spots in spaces 2 and 3 not overlapping and very widely separated from each other, both remote from cell spot, the one in 2 midway between the one in 3 and lower cell spot. Male brand dark, extending from vein 1 to vein 2, without pale patch, vein 1 slightly distorted. Two (in holotype) or three (in paratype) subapical spots present. Hindwing unmarked. Underside. Forewing. Ground extensively powdered by brownish yellow scales except spaces 1a and 1b and discal area. All spots on upperside repeated, with the upper cell spot present but minute. Hindwing extensively powdered by yellowish scales, more densely in anal area but this maybe due to the worn condition of type specimens. In holotype discal whitish spots present in spaces 2–7 but rather obscure, two postdiscal pale spots traceable in spaces 2 and 3, and a subbasal pale spot present in space 7. In paratype all pale spots obsolete but this maybe due to the very worn condition of the specimen.

Male genitalia. Uncus and gnathos similar to and almost indistinguishable from those of *T. blanchardii*, uncal processes blunt, short and rather close to each other, gnathos paired and short in ventral view. Lateral processes of tegumen completely absent. Left footstalk a little bifurcate with dorsal edge serrate. Right footstalk broader, apparently bifurcate, with dorsal edge serrate, and with lower branch subequal to or slightly shorter than upper branch. Clasps very broad at base, becoming narrower towards tip. Cuiller somewhat triangular in shape, with dorsal edge strongly serrate, and with the dorsal and distal branches not well marked. Aedeagus conspicuously convex on ventral margin near the tip in lateral view, without cornuti.

Female. Unknown at present.

Remarks

There is a single male specimen preserved in IZAS taken from Wu-zhi-shan, Hainan on August 21st 1964 by Prof. C.-L. LEE, which was suspected to be conspecific with *xiaoqingae* because of similar genitalia and general wing pattern. However this male specimen is very much worn out and no exact markings can be traced on the underside of the hindwing, and there is a slight difference in the gnathos of

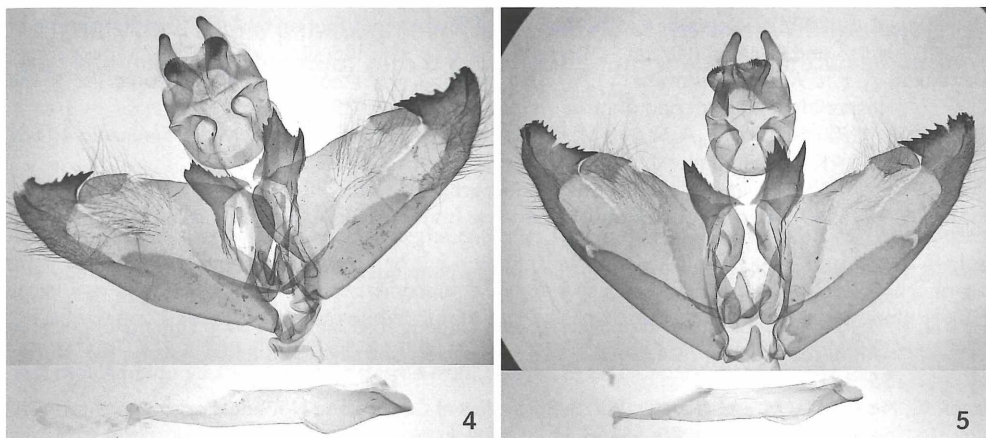


Fig. 4: Male genitalia of *Thoressa xiaoqingae* (holotype) consisting of spread genital capsule with dorsum in ventral view and both claspers in inner lateral view (top) and of aedeagus (bottom).

Fig. 5: Male genitalia of *Thoressa xiaoqingae* (paratype, Hainan) consisting of spread genital capsule with dorsum in ventral view and both claspers in inner lateral view (top) and of aedeagus (bottom).

male genitalia from the type specimens of *xiaoqingae*, thus we do not include this specimen from Hainan into the type series. The true taxonomic position of Hainan's population needs an examination of more fresh specimens in future.

Type data

Holotype ♂: LF 15.5 mm, Nanling Nature Reserve, Ru-yang, Guangdong province, China, August 10th 2002, leg. C.-H. ZHAN. Deposited in Institute of Zoology, Chinese Academy of Science, Beijing.

Paratype: 1 ♂, same data as holotype, deposited in the private collection of C.-H. ZHAN.

This new species is named after Miss XIAO QING, the girl friend of the junior author.

Distribution: Guangdong, (Hainan?).

Acknowledgement

We are very grateful to Dr. KATSURO YAHIRO, the Lake Biwa Museum of Japan, for his kind help in allowing us to examine the holotypes of *Thoressa dianchiana* and *T. nanshaona*. We also thank Dr. YOSHINOBU UEMURA and Dr. YUSUKE TAKANAMI for their kind help to dissect and take photos of the holotypes of *Thoressa dianchiana* and *T. nanshaona*.

References

- BRIDGES, C. A. (1988): Catalogue of HesperIIDae.
 DE JONG, R. & C. G. TREADAWAY (1993): The HesperIIDae (Lepidoptera) of the Philippines. – Zool. Verh. **288**: 3–115.
 DEVYATKIN, A. L. (1996): New HesperIIDae from North Vietnam, with the description of a new genus. – Atalanta **27** (3/4): 595–604.
 DEVYATKIN, A. L. (2000): HesperIIDae of Vietnam, 7. A contribution to the HesperIIDae fauna of the southern Vietnam. – Atalanta **31** (1/2): 198–204.
 DEVYATKIN, A. L. (2002): HesperIIDae of Vietnam, 11. New taxa of the subfamily HesperIIDae. – Atalanta **33** (1/2): 127–135, ill.

- DEVYATKIN, A. L. (2002): Hesperiidae of Vietnam, 12. A further contribution to the Hesperiidae fauna of North and Central Vietnam. – *Atalanta* **33** (1/2): 137–155, ill.
- DEVYATKIN, A. L. & A. L. MONASTYRSKII (1999): Hesperiidae of Vietnam 5 – An annotated list of the Hesperiidae of North and Central Vietnam. – *Atalanta* **29** (1/4): 151–184.
- ELIOT, J. N. (1992): In: CORBET, A. S. & H. M. PENDLEBURY, The butterflies of the Malay Peninsula 4th edition. – Kuala Lumpur.
- EVANS, W. H. (1932): The identification of Indian butterflies. 2nd edition. – Madras.
- EVANS, W. H. (1949): A catalogue of the Hesperiidae from Europe, Asia and Australia in the British Museum (N.H.). – British Museum.
- HUANG, H. (1998): Research on the butterflies of the Namjagbarwa region, S.E. Tibet. – *Neue ent. Nachr.* **41**: 207–263.
- HUANG, H. (2003): A list of butterflies collected from Nujiang (Lou Tse Kiang) and Dulongjiang, China with descriptions of new species, new subspecies, and revisional notes. – *Neue Ent. Nachr.* **55**: 3–114, 160–177.
- IKEDA, K., NISHIMURA, M. & H. INAGAKI (2001): Butterflies of Cuc Phuong National Park in Northern Vietnam (5). – *Butterflies* **30**: 58–66, ill.
- INOUE, S. & A. KAWAZOE (1964–1970): Hesperiid butterflies from South Vietnam. – *Tyo to Ga* **15** (2) (1964): 34–50; **15** (4) (1965): 84–105; **16** (3/4) (1966): 84–99; **17** (1/2) (1967): 1–17; **21** (1/2) (1970): 1–14, ill.
- KITAMURA, M. (2002): Butterflies from the southwest side slope of Mt. Banahaw, Mid-south Luzon, Philippines (6) Hesperiidae part 1. – *Butterflies* **32**: 4–17.
- LEECH, J. H. (1892–1894): Butterflies from China, Japan and Corea. – London.
- MARUYAMA, K. (1991): Butterflies of Borneo Vol. 2, No. 2. Hesperiidae. – Tokyo.
- MURAYAMA, S. (1995): Descriptions of 3 new species and 5 new races of Chinese butterflies from Yunnan Province. – *Insect & Nature* **30** (14): 32–35, 8 figs.
- OSADA, S., UEMURA, Y. & J. UEHARA (1999): An illustrated checklist of the butterflies of Laos P.D.R. – Mokuyo-sha, Tokyo, 240 pp. (143 pls.).
- PINRATANA, B. A. (1985): Butterflies in Thailand. Vol. 5. Hesperiidae. – *Brothers of St. Gabriel in Thailand*.
- SEITZ, A. et al. (1909): Macrolepidoptera of the world. Vol. 1. The Palaearctic Butterflies. – Stuttgart.
- SEITZ, A. (1927): Macrolepidoptera of the world. Vol. 9. The Indo-Australian Butterflies. – Stuttgart.
- SEITZ, A. (1929–1932): Macrolepidoptera of the world. Suppl. to Vol. 1. The Palaearctic Butterflies. – Stuttgart.
- WANG, Z.-G., NIU, Y. & D.-H. CHEN (1998): Insect fauna of Henan Lepidoptera: Butterflies [in Chinese]. – Henan Science & Technology, Zhengzhou.
- WANG, Z.-G. & Y. NIU (2002): Description of new species of Chinese butterflies (in Chinese). – *Entomotaxonomia* **24** (4): 276–282.
- WANG, Z.-Q. & F. YUAN (2003): Two new species of the genus *Thoressa* from China. – *Entomotaxonomia* **25** (1): 61–66.
- YOSHINO, K. (2003): New butterflies from China 8. – *Futao* **43**: 6–18.

addresses of the authors

HAO HUANG
503, # 1 Dong-ting-hu Road
266071, Qingdao
P. R. China
e-mail: cmdhxx@hotmail.com

CHENG-HUI ZHAN
304, # 61 Hong-ling-jin Road
Shan-tou, 515041
P. R. China
e-mail: bfdg123@21cn.com